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NORTHERN REGIONAL RESEARCH CENTER

PUBLICATIONS AND PATENTS

January-December 1979

Agricultural Research
Science and Education Administration
U.S. DEPARTMENT OF AGRICULTURE

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SCIENCE AND EDUCATION ADMINISTRATION
AGRICULTURAL RESEARCH

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REQUEST FOR INFORMATION

Results of research investigations at the Northern Regional Research Center are published regularly in the technical literature, and public service patents are secured to cover patentable inventions and discoveries (see page 70). As a convenient guide to our publications and patents, a list is published annually. Further information on any of the developments, as well as earlier technical papers, may be obtained by writing us.

In conformance with the policy of the U.S. Department of Agriculture, Northern Center publications are available to scientists and other specialists, librarians, representatives of the press, and others interested.

Requests for specific reprints should be by number and addressed to the Northern Regional Research

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Most of the publications are in journals that are available in libraries. Photographic copies of most journal articles on research at this Center can be purchased from the National Agricultural Library of the U.S. Department of Agriculture, Beltsville, Maryland 20750.

No publications will be sent regularly in response to foreign requests unless exchange arrangements have been made with the Director of the National Agricultural Library.

Copies of previous lists of publications and patents are available upon request.

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UNOFFICIAL PUBLICATIONS

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High-Temperature Enhancement of ^{13}C -N.M.R. Chemical-Shifts of Unusual Dextrans, and Correlation with Methylation Structural Analysis

Fred R. Seymour,¹ Roger D. Knapp,¹ Stephen H. Bishop,¹
 and Allene Jeanes²
 (¹Baylor College of Medicine, Texas Medical Center, Houston, Texas; ²Retired, Northern Regional Research Center, AR-SEA, USDA, Peoria, Illinois)
 Carbohydr. Res. 68(1): 123-140. January 1979

Structural Analysis of Dextrans Containing 2-O- α -D-Glucosylated α -D-Glucopyranosyl Residues at the Branch Points, by Use of ^{13}C -Nuclear Magnetic Resonance Spectroscopy and Gas-Liquid Chromatography-Mass Spectrometry

Fred R. Seymour,¹ Roger D. Knapp,¹ Edward C. M. Chen,²
 Allene Jeanes,³ and Stephen H. Bishop¹
 (¹Baylor College of Medicine, Texas Medical Center, Houston, Texas; ²University of Houston at Clear Lake City, Houston, Texas; ³Retired, Northern Regional Research Center, AR-SEA, USDA, Peoria, Illinois)
 Carbohydr. Res. 71: 231-250. June 1970

The α -D-Glucopyranosidic Linkages of Dextrans: Comparison of Percentages from Structural Analysis by Periodate Oxidation and by Methylation

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Carbohydr. Res. 74: 31-40. September 1979

Structural Analysis of Leuconostoc Dextrans Containing 3-O- α -D-Glucosylated α -D-Glucosyl Residues in Both Linear-Chain and Branch-Point Position, or Only in Branch-Point Positions, by Methylation and by ¹³C-N.M.R. Spectroscopy

Fred R. Seymour,¹ Roger D. Knapp,¹ Edward C. M. Chen,² Stephen H. Bishop,¹ and Allene Jeanes³

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Carbohydr. Res. 74: 41-62. September 1979

Structural Analysis of Dextrans Containing 4-O- α -D-Glucosylated α -D-Glucopyranosyl Residues at the Branch Points, by Use of ¹³C-Nuclear Magnetic Resonance Spectroscopy and Gas-Liquid Chromatography-Mass Spectrometry

Fred R. Seymour,¹ Roger D. Knapp,¹ Edward C. M. Chen,² Allene Jeanes,³ and Stephen H. Bishop¹

(¹Baylor College of Medicine, Texas Medical Center, Houston, Texas; ²University of Houston at Clear Lake City, Houston, Texas; ³Retired, Northern Regional Research Center, AR-SEA, USDA, Peoria, Illinois)

Carbohydr. Res. 75: 275-294. October 1979

PATENTS

[These patents are assigned to the Secretary of Agriculture. Copies of patents may be purchased (50 cents each) from the Commissioner of Patents and Trademarks, U.S. Patent and Trademark Office, Washington, D.C. 20231. Order by number, do not send stamps.]

Biodegradable Film Compositions Prepared from Starch and Copolymers of Ethylene and Acrylic Acid

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U.S. Patent 4,133,784. January 9, 1979

Highly Absorbent Graft Copolymers of Polyhydroxy Polymers, Acrylonitrile, and Acrylic Comonomers

George F. Fanta, Edward I. Stout, and William M. Doane
U.S. Patent 4,134,863. January 16, 1979

Extraction of Rubber or Rubberlike Substances from Fibrous Plant Materials

Russell A. Buchanan
U.S. Patent 4,136,131. January 23, 1979

Substituted Benzodioxan Sweetening Compound

William D. Dick, Jr. and John E. Hodge
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Method for Increasing Solution Viscosity of *Arthrobacter stabilis* Polysaccharides

Clarence A. Knutson, Jr.
U.S. Patent 4,146,705. March 27, 1979

Wax Esters of Vegetable Oil Fatty Acids Useful as Lubricants

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U.S. Patent 4,152,278. May 1, 1979

Interpolymer Paper Strength Additives

George Earle Hamerstrand and Merle E. Carr
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Norman E. Delfel and John A. Rothfus
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Synthetic Cephalotaxine Esters Having Antileukemic Activity

Kenneth L. Mikolajczak and Cecil R. Smith, Jr.
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Method of Preparing Corn Kernel Snack Food and Product Thereof

Glen E. Babcock and James H. Sloneker
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LICENSING OF PATENTS

Many inventions and discoveries of the Northern Center are covered by patents assigned to the Secretary of Agriculture.

Assigned patents are available for use by business and industry under either nonexclusive or limited exclusive licenses. Prospective licensees may obtain an

application form (ARS Form 247) from the address shown below. The completed form should also be sent to this address: Chief, Program Agreements & Patents Management Branch, U.S. Department of Agriculture, Administrative Services Division, SEA, Federal Building, Room 525, 6505 Belcrest Road, Hyattsville, Maryland 20782.

The Northern Regional Research Center is part of the Agricultural Research unit of the Science and Education Administration of the U.S. Department of Agriculture. Congress in 1938 authorized four regional laboratories to conduct broad and complex investigations in the field of chemistry and related physical sciences to expand and improve the marketability of agricultural commodities. The addresses and commodities covered are:

Laboratory

Eastern Regional Research
Center
600 East Mermaid Lane
Philadelphia, Pennsylvania 19118

Northern Regional Research
Center
1815 North University Street
Peoria, Illinois 61604

Southern Regional Research
Center
P.O. Box 19687
New Orleans, Louisiana 70179

Western Regional Research
Center
800 Buchanan Street
Berkeley, California 94710

Principal Fields of Research

Animal products: Milk, meats,
animal fats, hides, and skins.
Plant products: Eastern fruits
and vegetables.

Corn, wheat, grain sorghum, oats,
soybeans, and horticultural and
special crops. The Northern
Agricultural Energy Center is
located at NRRC.

Cotton and cottonseed, sweet
potatoes, rice, grain sorghum,
peanuts, cane sugar, and
triticale.

Western fruits and vegetables,
eggs, field crops, forage crops,
wheat, barley, rice, wool and
mohair, dry beans and peas, and
toxicology.

UNITED STATES DEPARTMENT OF AGRICULTURE
SCIENCE AND EDUCATION ADMINISTRATION
AGRICULTURAL RESEARCH
NORTHERN REGIONAL RESEARCH CENTER
1815 NORTH UNIVERSITY STREET
PEORIA, ILLINOIS 61604

OFFICIAL BUSINESS

POSTAGE AND FEES PAID
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AGR-101

